

**CAG Survey #1**  
**Submitted on March 28, 2007**  
**Response from EPA on May 21, 2007**

**1. How much has the (Portland Harbor) Superfund cost to date?**

*The investment from the LWG on the Superfund RI/FS totals more than \$45 million as of March 2007. This represents only the costs associated with sampling and analysis and oversight by federal and state agencies as well as participation by Tribal governments for the Superfund RI/FS. In addition individual property owners, local governments and companies along the river pay for their own upland site investigation and cleanup work, in-water sediment early actions as well as their own legal and administrative costs for both the Superfund site and the upland work.*

*- source: Barbara Smith for the Lower Willamette Group*

**2. How many upland sites have been completely cleaned up?**

*The best way to answer the question is to look 3 types of upland clean-ups: 1) site has been fully characterized & no clean-up is needed; 2) site has been partially cleaned-up; & 3) site has been fully cleaned-up.*

**1) Site has been fully characterized & no clean-up is needed (4)**

- 1) PGE Harborton
- 2) Jefferson Smurfit
- 3) Shaver Transportation
- 4) Goldendale Aluminum

**2) Site has been partially cleaned-up (27~~3~~)**

- 1) Oregon Steel Mills
- 2) Time Oil
- 3) City stormwater Outfalls
- 4) Kinder Morgan (aka GATX)
- 5) Linnton Plywood
- 6) Terminal 4 Slip 3
- 7) Exxon/Mobil
- 8) Arco/BP
- 9) Crawford Street Corp
- 10) Gasco
- 11) Siltronics~~s~~
- 12) Willamette Cove
- 13) Rhone Poulenc
- 14) Arkema
- 15) Triangle Park
- 16) Willbridge
- 17) Portland Shipyard

- 18) Container Recovery
- 19) Anderson Brothers
- 20) Gunderson
- 21) Columbia American Plating
- 22) GE Decommissioning Facility
- 23) Galvanizers
- 24) MarCom North
- 25) PGE Forest Park
- 26) UPRR Albina RR Yard
- 27) Schnitzer Steel

**3) Site has been fully cleaned-up (13~~4~~)**

- 1) ACF Industries
- 2) RoMar
- 3) UPRR St Johns Tank Farm
- 4) Terminal 4 Auto Storage Area
- 5) Marine Finance
- 6) McCormick & Baxter
- 7) NL Gould
- 8) Schnitzer Kittridge
- 9) Calbag Metals
- 10) Terminal 1 South
- 11) PGE Substation E
- 12) Linnton Oil Fire Training Grounds
- 13) Paco Pumps

*source: Jim Anderson and Matt McClincy, Oregon DEQ*

### 3. How many agencies are involved in the PHS?

**Federal:** (4)

- EPA
- NOAA
- FWS
- (USACE)

**State:** (4)

- DEQ
- ODFW
- DSL
- (DHS EHAPSSHINE)

**Municipal:** (2)

- \*City of Portland,
- \*Port of Portland (\*=PRP)

**Tribal:** (6)

- Siletz
- Warm Springs
- Grand Ronde
- Yakama
- Nez Perce
- Umatilla

For additional information see the September 2001 Intergovernmental Memorandum of Understanding under the administrative documents section of the EPA Portland Harbor website:  
<http://yosemite.epa.gov/r10/cleanup.nsf/sites/ptldharbor>

### 4. How many species have been collected for sampling?

Samples of thirteen species of benthic organisms and crawfish were collected from Portland Harbor. The effect of sediment contamination is evaluated for these species and then the ecological risk can be modeled for higher life forms that eat these organisms:

**Benthic invertebrates**

- Clams (*Corbicula* sp.)
- Chironomids
- Oligochaetes
- Flatworms
- dragonfly larvae
- western pearlshell mussel (*Margaritifera falcata*)
- winged floater (*Anodonta nuttalliana*)

- gastropod snails (*Pleuroceridae*)
- amphipods (*Corophium* sp.)
- sponges
- bryozoa

**Crayfish**

- western freshwater crayfish (*Pacifastacus leniusculus*)
- Siberian prawn (*Exopalaemon modestus*)

Nine fish species were sampled at the Portland Harbor Superfund site. Several categories of fish were selected as ecological receptors to represent the various feeding guilds in the lower Willamette River. Information on how they were selected is found in Appendix B of the 2004 Programmatic Work Plan:

**Omnivorous and herbivorous fish**

- largescale sucker
- carp
- pre-breeding white sturgeon

**Invertivorous fish**

- sculpin (benthic invertivore)
- peamouth

- juvenile chinook salmon (benthopelagic invertivores)

**Piscivorous fish**

- smallmouth bass
- northern pikeminnow

**Detritivorous fish**

- Pacific lamprey ammocoetes

**Note:** Many important species in Portland Harbor will **not** actually be sampled. The effect on representative species of wildlife birds and mammals will be estimated by the use of **models**. Important species for which effects will be modeled include:.

- **Spotted sandpiper** – sediment-probing invertivorous and omnivorous birds (surrogate receptor for herbivorous birds)
- **Hooded merganser** – diving carnivorous and omnivorous birds

- **Bald eagle** – piscivorous birds
- **Osprey** – piscivorous birds
- **Mink** – carnivorous mammals
- **River otter** – carnivorous mammals

**Plants** – Twenty-six plant species were identified during a survey of the Study Area. Half of the plant species identified are exotic to the lower Willamette River. No special status plant species were observed.

**5. How many cubic yards of contaminated sediment have been removed from the PHS?**

15,000 cubic yards at GASCO

**6. How much riverbank has been capped?**

No permanent capping has been conducted for Portland Harbor. A temporary cap is in use at GASCO.

**7. How much has been spent on the laboratory testing?**

Of the \$45 million spent on the Portland Harbor RI/FS, about 80 percent has been spent on sampling and analysis and the other 20 percent has been spent on oversight costs of federal and state agencies and participation by Tribal Governments. The LWG does not track figures for laboratory testing costs for upland or early action work.

**8. How much has been spent on remedial actions?**

No money has been spent on remedial action yet. Planning is still in progress.

**9. Which fish found in PHS consumed by humans qualify as the greatest health risks?**

Carp, bass and catfish are identified species of concern by the Oregon Department of Human Services in the fish advisory for the lower Willamette River. These fish had consistently higher levels of PCBs.

**10. How many early actions have been initiated/completed?**

EPA has agreements with parties for three early actions. The GASCO removal is complete. The Terminal 4 cleanup decision was issued in May 2006 and the removal design is in process. The draft work plan for the Arkema Engineering Evaluation and Cost Analysis (EE/CA) is out for review.

Three additional early actions are in the early planning stages, a second removal at GASCO, an upland removal at Triangle Park, and a removal at US Moorings.

**11. What is the final outcome in terms of measurable results, cost and projected date of completion?**

The projected date for completing the RI/FS is 2010. The schedule is the current newsletter.